

**I CLAIM:**

1. An electrical connector adapted for establishing electrical connection between an electronic card and a circuit board, the electronic card being formed with a set of conductive contacts, the circuit board being  
5 formed with a plurality of solder contacts, said electrical connector comprising:

a dielectric connector housing having opposite top and bottom walls, and opposite lateral walls  
10 interconnecting said top and bottom walls and cooperating with said top and bottom walls so as to confine a card receiving groove, said dielectric connector housing further having a front open side for access into said card receiving groove, and a rear side,  
15 said top wall having a first inner mounting surface, and a first outer mounting surface opposite to said first inner mounting surface, said bottom wall having a second inner mounting surface, and a second outer mounting surface opposite to said second inner mounting surface;

20 a terminal connecting board mounted on said rear side of said dielectric connector housing and having a first surface adjacent to said rear side of said dielectric connector housing, and a second surface opposite to said first surface, said terminal connecting board being  
25 formed with a plurality of circuit traces, a plurality of conductive vias extending from said first surface to said second surface and coupled electrically and

respectively to said circuit traces, and a plurality of solder pads formed on said second surface, adapted to be connected electrically and respectively to the solder contacts on the circuit board, and coupled  
5 electrically and respectively to said circuit traces such that each of said conductive vias is adapted to be coupled electrically to a corresponding one of the solder contacts on the circuit board via a corresponding one of said circuit traces and a corresponding one of  
10 said solder pads;

a set of first conductive terminals mounted on one of said first inner and outer mounting surfaces of said top wall and said second inner mounting surface of said bottom wall, each of said first conductive terminals  
15 having a first coupling end portion extending in and connected electrically to a corresponding one of said conductive vias in said terminal connecting board, and a first contacting end portion opposite to said first coupling end portion, projecting into said card receiving groove, and adapted to contact electrically  
20 a corresponding one of the conductive contacts on the electronic card when the electronic card is inserted into said card receiving groove through said front open side of said dielectric connector housing; and

25 a set of second conductive terminals mounted on said second outer mounting surface of said bottom wall, each of said second conductive terminals having a second

coupling end portion extending outwardly of said rear side of said dielectric connector housing and adapted to be connected electrically and directly to a corresponding one of the solder contacts on the circuit board, and a second contacting end portion opposite to said second coupling end portion, projecting into said card receiving groove, and adapted to contact electrically a corresponding one of the conductive contacts on the electronic card when the electronic card is inserted into said card receiving groove through said front open side of said dielectric connector housing.

2. The electrical connector as claimed in Claim 1, wherein said top wall of said dielectric connector housing has a front end formed with a notch, said first contacting end portion of each of said first conductive terminals extending through said notch and projecting into said card receiving groove when said first conductive terminals are mounted on said first outer mounting surface of said top wall of said dielectric connector housing.

3. The electrical connector as claimed in Claim 1, wherein said bottom wall of said dielectric connector housing is formed with a set of through holes, each of which permits extension of said second contacting end portion of a corresponding one of said second conductive terminals therethrough.

4. The electrical connector as claimed in Claim 1,

wherein said dielectric connector housing further has a rear wall formed with a plurality of mounting holes that respectively permit extension of said first coupling end portions of said first conductive terminals and said second coupling end portions of said second conductive terminals therethrough.

5        5. The electrical connector as claimed in Claim 4, further comprising a set of third conductive terminals, each of which is mounted in a corresponding one of said mounting holes in said rear wall, and has a third coupling end portion extending outwardly of said rear wall and connected electrically to a corresponding one of said conductive vias in said terminal connecting board, and a third contacting end portion opposite to said third coupling end portion, extending into said card receiving groove, and adapted to contact electrically a corresponding one of the conductive contacts on the electronic card when the electronic card is inserted into said card receiving groove through said front open end of said dielectric connector housing.

10       6. An electrical connector assembly adapted for establishing electrical connection between an electronic card and an external electronic device, the electronic card being formed with a set of conductive contacts, said electrical connector assembly comprising:

25       a casing having opposite front and rear open ends,

said casing confining a receiving space and being formed with a connector mounting seat in said receiving space;

5 a circuit board mounted in said receiving space and disposed adjacent to said rear open end, said circuit board being formed with a plurality of solder contacts; and

a connector disposed in said receiving space and mounted on said connector mounting seat, said connector including

10 a dielectric connector housing having opposite top and bottom walls, and opposite lateral walls interconnecting said top and bottom walls and cooperating with said top and bottom walls so as to confine a card receiving groove, said dielectric  
15 connector housing further having a front open side for access into said card receiving groove, and a rear side, said top wall having a first inner mounting surface, and a first outer mounting surface opposite to said first inner mounting surface, said bottom wall having a second  
20 inner mounting surface, and a second outer mounting surface opposite to said second inner mounting surface,

a terminal connecting board mounted on said rear side of said dielectric connector housing and having a first surface adjacent to said rear side of said  
25 dielectric connector housing, and a second surface opposite to said first surface, said terminal connecting board being formed with a plurality of circuit traces,

a plurality of conductive vias extending from said first surface to said second surface and coupled electrically and respectively to said circuit traces, and a plurality of solder pads formed on said second surface, connected  
5 electrically and respectively to said solder contacts on said circuit board, and coupled electrically and respectively to said circuit traces such that each of said conductive vias is coupled electrically to a corresponding one of said solder contacts on said circuit  
10 board via a corresponding one of said circuit traces and a corresponding one of said solder pads,

a set of first conductive terminals mounted on one of said first inner and outer mounting surfaces of said top wall and said second inner mounting surface  
15 of said bottom wall, each of said first conductive terminals having a first coupling end portion extending in and connected electrically to a corresponding one of said conductive vias in said terminal connecting board, and a first contacting end portion opposite to said first  
20 coupling end portion, projecting into said card receiving groove, and adapted to contact electrically a corresponding one of the conductive contacts on the electronic card when the electronic card is inserted into said card receiving groove through said front open  
25 side of said dielectric connector housing, and

a set of second conductive terminals mounted on said second outer mounting surface of said bottom wall,

each of said second conductive terminals having a second coupling end portion extending outwardly of said rear side of said dielectric connector housing and connected electrically and directly to a corresponding one of said solder contacts on said circuit board, and a second contacting end portion opposite to said second coupling end portion, projecting into said card receiving groove, and adapted to contact electrically a corresponding one of the conductive contacts on the electronic card when the electronic card is inserted into said card receiving groove through said front open side of said dielectric connector housing.

7. The electrical connector assembly as claimed in Claim 6, wherein said circuit board has a mounting side formed with said solder contacts and disposed adjacent to a bottom edge of said terminal connecting board and said rear side of said dielectric connector housing such that an angle is formed between said terminal connecting board and said circuit board, said solder pads of said terminal connecting board being disposed adjacent to said bottom edge of said terminal connecting board and being coupled electrically and respectively to said solder contacts on said circuit board by means of solder material filled in the angle.

8. The electrical connector assembly as claimed in Claim 7, wherein said terminal connecting board is disposed transverse to said circuit board.

9. The electrical connector assembly as claimed in Claim 6, wherein said top wall of said dielectric connector housing has a front end formed with a notch, said first contacting end portion of each of said first conductive terminals extending through said notch and projecting into said card receiving groove when said first conductive terminals are mounted on said first outer mounting surface of said top wall of said dielectric connector housing.

10. The electrical connector assembly as claimed in Claim 6, wherein said bottom wall of said dielectric connector housing is formed with a set of through holes, each of which permits extension of said second contacting end portion of a corresponding one of said second conductive terminals therethrough.

11. The electrical connector assembly as claimed in Claim 6, wherein said dielectric connector housing further has a rear wall formed with a plurality of mounting holes that respectively permit extension of said first coupling end portions of said first conductive terminals therethrough when said first conductive terminals are mounted on one of said first inner surface of said top wall and said second inner surface of said bottom wall.

12. The electrical connector assembly as claimed in Claim 11, further comprising a set of third conductive terminals, each of which is mounted in a corresponding one of said mounting holes in said rear wall, and has



a third coupling end portion extending outwardly of said rear wall and connected electrically to a corresponding one of said conductive vias in said terminal connecting board, and a third contacting end portion opposite to  
5 said third coupling end portion, extending into said card receiving groove, and adapted to contact electrically a corresponding one of the conductive contacts on the electronic card when the electronic card is inserted into said card receiving groove through said  
10 front open side of said dielectric connector housing.  
13. The electrical connector assembly as claimed in Claim 6, further comprising a PCMCIA connector mounted in said rear open end of said casing, connected electrically to said circuit board, and adapted to be connected  
15 electrically to the external electronic device.